

SCIAPHYLLUM, GENUS NOVUM ACANTHACEARUM

by

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Among the *Acanthaceae* grown in the glasshouses of the University Botanic Garden, Utrecht, a plant labelled *Aphelandra velutina* drew my attention, first, because it obviously belonged to an entirely different genus, and secondly, because a description under this name could nowhere be found¹⁾. The coincidence of these two grounds for bewilderment might be explained by assuming that *Aphelandra* was merely a perversion, probably caused by the inadvertency of a transcriber, of the true generic name. This sounded plausible enough, but the name itself could not be found, for all attempts to refer the plant to one of the existing genera failed. It looked as if the plant might have been described somewhere, but for the time being there was no indication at all as to the whereabouts of this description.

A clue to the origin of the name was obtained some time afterwards when I found in the Utrecht herbarium a specimen belonging to the same species which was labelled *Eranthemum velutinum*: the specific epithet, therefore, was the same, but the generic name was different and, as I will show presently, nearer to the mark. The specimen, which dated from 1922, had been collected by the roadside in the Buitenzorg suburb Kotta Paris, and had apparently been named by an official of the Buitenzorg Botanic Gardens. It is, however, certainly no native Javanese plant, for the flora of Java, and particularly that of Buitenzorg, is well known, and a rather conspicuous plant like this one could not have escaped the attention: it was obviously a runaway from one of the neighbouring gardens.

The name *Eranthemum velutinum* was applied by BOERLAGE (Handl. Fl. Ned.-Ind. II, 2, p. 661, 1899) to a plant described by LINDAU (Engler's Bot. Jahrb. XIX, Beiblatt 48, p. 5, 1894) as *Pseuderanthemum velutinum*, which according to the rules of nomenclature is the right name. Comparison of our plant with LINDAU's description showed, however, that the two are utterly different.

1) In the seed catalogues of the Botanical Gardens at Edinburgh (f.i. that of 1935) and at Glasgow however the name is mentioned, but whether it refers to our plant must remain at present uncertain.

The leaves of LINDAU's plant are but 5—6 cm long, softly pubescent on both sides and provided with a 4 mm long petiole; its inflorescences are dichasially ramified, everywhere softly pubescent and provided with filiform, 3 mm long bracts; its corolla lobes are subequal and 10 mm long; and the style is densely hirtellous. Our plant, on the other hand, has up to 14 cm long, glabrous leaves provided with an up to 7 cm long petiole; its inflorescence is spicate, glabrous and provided with ovate-triangular, not more than 1.5 mm long bracts; its corolla is strongly bilabiate, and its lobes are not more than 5 mm long; the style, finally, is glabrous. In view of such striking differences a misidentification seems excluded: it is much more probable that the name of the Buitenzorg specimen was copied from a label in the Buitenzorg Botanic Garden. This would mean that our plant was cultivated there at that time under the illegitimate horticultural name *Eranthemum velutinum*. That this name does not occur in the garden catalogue of 1914 is of no importance: the plant may have been introduced after that year; that it is not to be found in the catalogue of 1930 means either that at that time it was already defunct or that the authors of the catalogue had found out that the name was wrong. As the Index Kewensis does not mention this homonym, I assume that it has never been published.

A further inquiry after the origin of the plant grown at Utrecht confirmed my conclusions. Our curator told me that it had been raised from seed obtained from a botanic garden in the United Kingdom, probably from the Royal Botanic Gardens, Kew. I, therefore, sent a photograph of the plant to the Director of the Kew Gardens, asking his advice. Sir ARTHUR HILL at once very kindly replied that the photograph doubtless represented the plant grown at Kew under the name *Eranthemum velutinum*. Further inquiries have been made impossible by the outbreak of war, but that the plant is horticulturally known as *Eranthemum velutinum* may now be regarded as sufficiently established.

The specific epithet is not well chosen, for the leaves, though looking from a distance more or less "velvety", are merely papillate, and they are therefore not "velutinous" in the botanical sense. For this reason it seemed better to drop it. As the aestivation of the corolla lobes is imbricate, the generic name was obviously used by the unknown author in the sense of T. ANDERSON. It is now, however, commonly conceded that the name *Eranthemum* should be used for the plants referred by the latter to the genus *Daedalacanthus*, and that ANDERSON's *Eranthemum* should be called *Pseuderanthemum*.

Our plant, however, can not be referred to *Pseuderanthemum* itself, for in the latter the corolla lobes are but slightly unequal, and all five free and spreading, and the stamens are but very shortly exserted, whereas in our plant the corolla is distinctly bilabiate, the almost entirely connate posticous lobes forming a projecting upper lip, under which the rather far exserted stamens are hidden. It is difficult, on the other hand, to assign it its proper place. In my own classification (Rec. d. trav. bot néerl. XXXV, p. 134, 1938) it would fall in the *Odontonemeae*, but this tribe, which comprises no less than six of LINDAU's tribes (*Andrographideae*, *Asystasieae*, *Graptophylleae*, *Rhombochlamydeae*, *Pseuderanthemeae*, *Odontonemeae*), is such a large one, that some further specification is urgently needed.

In the paper quoted above I accepted the six tribes of LINDAU together with the *Diclipterinae* provisionally as subtribes, but subsequently I have come to the conclusion that most of them are so unnatural that even as subtribes they can not be maintained. At a later date LINDAU was apparently not unaware of this, for in URBAN's Symb. Antill. II, 2, p. 172, 1900 he already sank his *Pseuderanthemeae* in one of the subtribes of his *Odontonemeae*, but the differences between the five remaining tribes too are mostly either insignificant or even fictitious. His *Odontonemeae*, for instance, are separated from the other tribes on account of the grooves of the pollen grains: these grooves are said to be all directed towards the poles. In the genus *Drejera* and in some species of the genus *Odontonema* itself (see my paper: p. 137 and tab. XV fig. I and J) the grooves which do not contain germ pores are, however, at their ends united in pairs, dividing in this way the fields between the other grooves in a central and a marginal part, i.e. the grains of these plants show the structure which is considered typical of the *Asystasieae* and the *Graptophylleae*. The subdivision of the group to which these tribes of LINDAU belong (my *Odontonemeae*) will have to be recast in an entirely new shape, but to this end a much more detailed knowledge of the various genera is needed.

Though neither the older classifications of NEES AB ESENBECK and of BENTHAM and HOOKER f. nor that of LINDAU can be considered satisfactory, their keys and those of some of their followers may nevertheless shed some light on the genera which might be related to our plant.

In NEES' classification in DC., Prodr. XI our species would fall in the *Eranthemeae*: its stamens are inserted towards the end of the corolla tube, the anther cells are inserted at the same height, and the capsule is 4-seeded and stipitate. In this group there are but

three genera with a bilabiate corolla, and of these the genus *Rhinacanthus* is the only one with a 4-seeded capsule. It differs from our plant in the paniculate, not spicate inflorescence, the 5-fid, not 5-partite calyx, and in the insertion of the anther cells at a different height (the description of NEES, in which they are said to be inserted at the same height, is wrong).

In the classification proposed by BENTHAM and HOOKER f. the imbricate aestivation of the corolla lobes with the two posticous ones inside assign our plant a place in the *Justicieae*, and the bilabiate corolla and the presence of but two ovules in each of the ovary cells in the subtribe *Eujusticieae*. The presence of but two stamens, the insertion of the anther cells at the same height and the absence of staminodia leave us the choice between the genera 102 to 110. Of these 102. *Harpochilus*, 103. *Hoverdenia* and 106. *Himantochilus* are excluded, because in these genera the calyx lobes are too large; 104. *Schaueria*, 105. *Anisacanthus* and 107. *Fittonia* need not to be taken into account, because they are provided with a corolla of which the limb is divided into narrow segments; 108. *Ptyssiglottis* falls out, because its corolla tube is too short; 109. *Sphinctacanthus*, because its corolla tube is inflated. 110. *Ecbolium* resembles our plant better than any of the others, but its bracts are imbricate and the flowers in their axils are solitary, not fascicled.

The key given by CLARKE in the "Flora of British India" is based on the same principles and leaves us the choice between the four genera *Ptyssiglottis*, *Sphinctacanthus*, *Ecbolium* and *Graptophyllum*. The latter is excluded, because its stamens are decurrent on the tube, and because it possesses two staminodes.

The key given by BURKILL and CLARKE in the "Flora of Tropical Africa" leads us to the genera *Graptophyllum* and *Schaueria*. The African species referred to the latter is apparently but distantly related to the Brazilian ones, and might better be placed in a genus of its own. It differs from our plant in the shape of the inflorescence, which is narrowly paniculate, and in the greater length of the calyx lobes, which are almost as long as the corolla tube. The Brazilian species are moreover yellow-flowered.

The key on p. 287 of LINDAU's monograph in ENGLER & PRANTL brings us first to the *Acanthoideae Imbricatae*. Here the *Acantheae* and *Aphelandreae* are excluded, because they possess an entirely different kind of pollen and monothealous anthers. The *Andrographideae* (and also the *Rhombochlamydeae*, which afterwards were inserted here) are excluded on account of the structure of the pollen grains and on account of the presence of more than two ovules in each of the ovary cells; the *Asystasieae* may be discarded, because

they are provided with four stamens; and the *Isoglosseae* and *Justicieae* at the end of the key have again a different kind of pollen. Three tribes are left therefore: the *Graptophylleae*, *Pseuderanthemeae* and *Odontonemeae*. Of the three subtribes of the latter the *Diclipterinae* fall out, because their flowers are surrounded by an involucre, and the *Monotheicinae*, because their anthers are monothecous. As stated above, the differences between the *Graptophylleae*, *Pseuderanthemeae* and *Odontoneminae* are unreliable, and of these three groups, therefore, the keys will have to be consulted.

The key to the *Graptophylleae* (l.c. p. 327) gives us the choice between *Carlowrightia* and *Anisacanthus*, but in both genera the upper lip is entire, not emarginate, and they have both much smaller and altogether different leaves. In *Carlowrightia*, moreover, each bract subtends but a single flower, and in *Anisacanthus* the spikes are secund and the corolla lobes, as stated above, narrow.

Among the *Pseuderanthemeae* (l.c. p. 329) the only genus with a long and slender corolla tube is *Pseuderanthemum* itself, and that this genus need not be taken into account, has been shown above.

The key to the *Odontoneminae* (l.c. p. 334) brings us to *Ecboium*, but this genus too has been excluded already.

Among the pollen grains figured by LINDAU in ENGLER's Bot. Jahrb. XVIII, 1894 those of *Siphonoglossa* and *Streblacanthus* show between the grooves the same kind of reticulation as occurs in the pollen grains of our species. A reinvestigation of some of the other genera has shown, however, that this reticulation is present in *Graptophyllum*, *Pseuderanthemum* and *Ecboium* also. LINDAU does not figure the pollen grains of *Graptophyllum*, but he states that the fields between the grooves containing the germ pores are divided by an elliptic groove in a central and a marginal part. The flowers which I could investigate were all completely sterile, the anthers remaining closed and the pollen grains being all empty and crumpled. Their structure was therefore difficult to make out, but I am nearly sure that they are of the same kind as those of *Pseuderanthemum*, *Ecboium* and our new genus, i.e. that they are provided with three sets of three grooves, all rather short and directed towards the poles.

On the genera discussed above *Graptophyllum*, *Ecboium* and *Rhinacanthus* come perhaps nearest to our new one. Apart from the differences to which attention has already been drawn, one more deserves to be noted, namely the curious structure of the lower lip, a structure which, as far as I know, does not occur anywhere else. It is three-lobed, and the lobes are nearly equal in size and shape, but whereas the two lateral ones are spreading, the middle one is reflexed and pressed against the corolla tube. I may add that among

the genera described since the appearance of LINDAU's monograph none appear to come nearer to our new genus than those discussed above; and further that it is possible, of course, that our plant has been described in one of the existing genera, but that in those discussed above, I have not been able to find anything at all like it. For this reason, I think, I am justified in describing it as new.

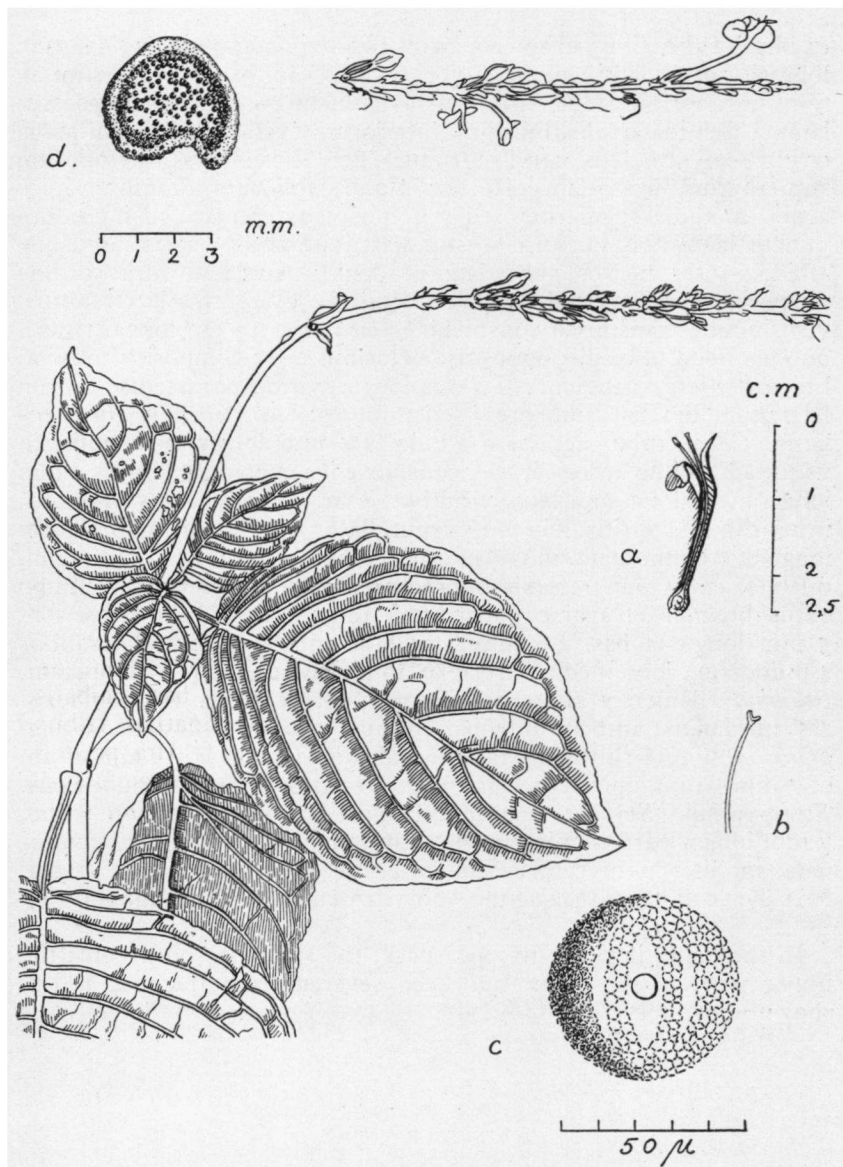
Sciaphyllum genus novum *Odontonemearum* sensu meo, a generibus aliis ad tribum hunc pertinentibus quae corolla longituba bilabiata munita sunt labio superiore emarginato, lobis labii inferioris rotundatis, mediano reflexo, staminibus faucibus insertis, longius exsertis, thecis basi haud appendiculatis oppositis, staminodiis nullis distinguendum.

Folia quoque pari aequalia. *Inflorescentia* spica terminalis, floribus in axillis bractearum oppositarum fasciculatis, bracteis bracteolisque parvis persistentibus. *Calyx* bracteis multo longior, corollae tubo multo brevior, aequaliter 5-partitus, tubo brevi incrassato, lobis linearibus acutis. *Corolla* purpurella, tubo cylindrico gracili, leviter incurvato, ad apicem in fauces breves vix conspicue dilatato, limbo bilabiato, labio superiore anguste triangulari, apice emarginato, labio inferiore 3-lobato, lobis orbicularibus subaequalibus, lateralibus patentissimis, mediano ad basin reflexo. *Stamina* duo, basi faucium inserta, exserta sed sub labio superiore celata, filamentis haud decurrentibus, antheris erectis acutis, a latere compressis, basi bilobatis, lobis acutis. *Granula pollinis* globosa, poris germinativis tribus, quoque poro in fissura meridionali insito, quaque fissura porifera utroque latere fissura sterili etiam meridionali comitata, fissuris omnibus latioribus et brevibus, superficie inter fissuras reticulata. *Staminodia* nulla. *Gynophorium* humile (vulgo discus annularis). *Ovarium* basi solidum, quoque loculo ovulis duobus. *Stylus* glaber, exsertus. *Stigmata* duo aequalia, intus plana, parva. *Capsula* stipitata, stipite parte seminifera paulo longiore, parte seminifera elliptica, 4-seminali, seminibus retinaculis hamatis acutis suffultis, omnibus ad altitudinem fere aequalem insertis. *Semina* complanata et marginata, intra marginem tumidam muricata, orbicularia, basi inaequalia.

Distributio ignota. Species unica:

Sciaphyllum amoenum Brem. n. spec.; *Eranthemum velutinum* Hort. ined., non (LINDAU) BOERL.

Planta basi lignosa, caule sympodiali simplici erecto, 40—60 cm alto, 7—10 mm diam., subtereti, supra nodos incrassato, levi, lenticellis in costulas quattuor dispositis vix conspicue punctato. *Folia* in exemplis junioribus internodiis 3.5—10 cm longis separata, in



Sciaphyllum amoenum Brem.

- a. corolla in longitudinal section. b. top of the style with the stigmata.
c. pollen grain. d. seed.

exemplis florentibus ad apicem caulis approximata; petiolus 1.5—7 cm longus, supra laminam versus excavatus, ad basin praesertim in foliis inferioribus incurvatus, infra laminam versus purpurascens; lamina basi inaequalis, foliorum inferiorum ovata, 9.5—14 cm longa et 7.7—9.5 cm lata, nervis utroque latere costae 11—13, foliorum supremorum ovato-lanceolata et minor, foliorum omnium apice acuta, margine regulariter sed vix conspicue crenata, ad incisiones punctis laete viridibus ornata, supra saturate viridis, costa nervisque albidis, inter nervos subbulata et dense papillata, infra sordide purpurea, nervis tamen pulchre purpureis, cystolithis sicc. subtus, vivo lumine transmissis conspicuis. *Spica* circ. 13 cm longa, rigida, quoque nodo fasciculis oppositis, e floribus 2—5 compositis munita; bracteae ovato-triangulares 1.5 mm longae, virides; bracteolae florum lateralium bracteis similiores, sed minores; flos centralis ebracteolatus. *Calyx* tubo incrassato albido, 1.5 mm longo, post anthesin usque ad 2.5 mm accrescente et conspicue intumescente; lobis 5.5 mm longis et basi 1.1 mm latis, viridibus, extus pilis capitatis brevibus, intus papillis vestitis. *Corolla* purpurella 27 mm longa, tubo 18 mm longo et 0.9 mm diam. in fauces 4 mm longas et ad orem 3 mm diam. dilatato, extus pilis reflexis pubescente, intus glabro et albo; limbo extus breviter et sparse pubescente, intus glabro; labio superiore 5 mm longo et basi 2.8 mm lato; labii inferioris lobis lateralibus 4 mm diam., lobo mediano reflexo, in alabastro externo, 3 mm diam. *Stamina* filamentis albis, brevissime pubescentibus vel papillosis, 4.5 mm longis; antheris luteolis. Granula pollinis 48 μ diam. *Gynophorium* minute rubropunctatum, glabrum. *Ovarium* 2.5 mm altum et 1 mm latum, apice et suturis rubro tinctum et minute pubescens. *Stylus* albus. *Stigmata* 0.2 mm longa, incurvata. *Capsula* stipite 7 mm longo, parte seminifera 6.5 mm longa et 4.5 mm lata, acuminata, molliter pubescente. *Semina* 4 mm diam. et 0.5 mm crassa.

In horto botanico trajectino sub vitro cultum; patria ignota.

In the plate, in order to find space, the spike has been bent; the upper portion, moreover, has been severed from the rest and is shown separately.